

Date: Sat, 9 Oct 93 04:30:10 PDT
From: Ham-Ant Mailing List and Newsgroup <ham-ant@ucsd.edu>
Errors-To: Ham-Ant-Errors@UCSD.Edu
Reply-To: Ham-Ant@UCSD.Edu
Precedence: Bulk
Subject: Ham-Ant Digest V93 #72
To: Ham-Ant

Ham-Ant Digest Sat, 9 Oct 93 Volume 93 : Issue 72

Today's Topics:

2/70 beam project wanted
??Thick or thin diapole wire best???
Calculations for 2m Quad
How can make the best Antena?

Transmit 2m and 70cm at the same time on a dual band antenna (2 msgs)

Send Replies or notes for publication to: <Ham-Ant@UCSD.Edu>
Send subscription requests to: <Ham-Ant-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Ant Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-ant".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Fri, 08 Oct 93 00:57:09 CDT
From: spool.mu.edu!umn.edu!kksys.com!edgar!moron!pillock!stevej@uunet.uu.net
Subject: 2/70 beam project wanted
To: ham-ant@ucsd.edu

murrayp@lafcol.lafayette.edu (Pete Murray (N3IXY)) writes:

> Ted Cline (tccline@hplvec.LVLD.HP.COM) wrote:
>
> : > In rec.radio.amateur.antenna, Rick Aldom <ayka60@email.sps.mot.com> write
> : >
> : > Hi I would like some plans from someone who has built and likes their
> : > dual band beam.....(if it is at all possible to combine them). I would
> : > like an antenna that can be taken down and transported in a small vehicle
> : > and set up when camping. Has anyone seen an animal like what I have
> : > described? Thanks again for the assistance.....BTW if you have a a mono
> : > band beam that really trips your trigger I would love to see those plans
> : > also.

> : >
> : > I have seen some "arrow" antennas, and since I am an archer, this seems
> : > like a good place to start.....Thanks again
> : >
> : > Rick Aldom
> : > ayka60@email.sps.mot.com
>
> I had been tossing about the idea of a 2m/70cm cubical quad design, with
> each band having a common axis, but elements within one another. Perhaps
> an 11 element 70cm beam within a 2m beam...perhaps?
> I would think that having elements within elements would minimize
> radiation pattern disruptions..but am I missing anything?
> I haven't any written down plans for such a device, but if there were
> found no critical flaws in such a design, I would be willing to work
> something out on paper (on computer, actually).
>
> -Pete
>
> Pete Murray (N3IXY)
> Lafayette College
> murrayp@lafcol.lafayette.edu
> --
> Pete Murray (N3IXY)
> Lafayette College
> murrayp@lafcol.lafayette.edu

There was a design for this concept in 73mag 1 or 2 years ago. If anyone is
interested I will pull out the book and list the issue.

Steve KA0VYB

Date: Sat, 9 Oct 1993 03:44:35 GMT
From: news.service.uci.edu!paris.ics.uci.edu!csulb.edu!library.ucla.edu!
news.ucdavis.edu!bullwinkle.ucdavis.edu!szhall@network.ucsd.edu
Subject: ??Thick or thin dipole wire best???
To: ham-ant@ucsd.edu

I just put up a 40 meter dipole and it works very well, I also use it for
other bands with a tuner. I am using RG 58U feed line. My question is
this: Other than strength is it better to use thicker wire for a ant.
Someone one told me if I use a thick wire I don't need to adjust the
tuner so often between freq. Thicker wire is broad band. What's ur
comment..Tnx for reading this..Jeff

Date: Thu, 7 Oct 1993 09:02:03 GMT
From: pa.dec.com!nntpd2.cxo.dec.com!nuts2u.enet.dec.com!little@decwrl.dec.com
Subject: Calculations for 2m Quad
To: ham-ant@ucsd.edu

stocker@nssdca.gsfc.nasa.gov (ERICH FRANZ STOCKER) writes:

>I am in the process of building a 3 element quad for 2m. I have run into
>some questions based on the closet approximation calculation to use for
>determining the full wavelength for the 2m.
>
>If I use 1005/Mhz for driven, 1030/Mhz for reflector, 975/Mhz for director I
>get the following sizes (rounded) for a 146 centered quad:
>
>Dir: 80" Driv: 83" Ref: 85"
>
>However, if I use 984/Mhz for the driven and then use 1.05% for reflector and
>95% for the director, I get the following sizes (rounded) for a 146
>center quad:
>
>Dir: 77" Driv: 81" Ref: 85"
>
>The reflector size particularly looks strange in the two when compared to
>the size of the driven element.
>
>Which one is likely to get me the best approximation to the best size for
>the elements. At these high frequencies, being out by 2" seems kind of
>large.

Well you don't say what you want to optimize, so just taking a rough
approximation at a "reasonable" design as verified by NEC-2 and aiming for
a 50 ohm match I'd suggest the following geometry (in meters):

Element	Distance from Reflector	Element Length
Reflector	0.00	2.26
Driven	0.49	2.16
Director	0.86	1.92

This should give a good match directly to 50 ohm coax and have
approximately 8.7 dBi of gain, 68 degree beamwidth, and a F/B ratio of at
least 25 dB. If you use this design, let me know how it turns out as
empirical evidence is always reassuring.

Attached is a Postscript polar plot of the antenna's H plane pattern.

73,
Todd
N9MWB

```
%!PS-Adobe-2.1
%%Creator: PolarPlot X1.0
%%+Copyright (c) 1990 DIGITAL EQUIPMENT CORPORATION.
%%+All Rights Reserved.
%%DocumentFonts: (atend)
%%EndComments
%%BeginProcSet PolarPlot X1.0

% polar to cartesian
% r phi -- x y
/pc { 2 copy cos mul 3 1 roll sin mul } def

% polar moveto
% r phi --
/pm { pc moveto } def

% polar lineto
% r phi --
/pl { pc lineto } def

% polar coordinate grid
% arguments are radius of chart, number of 5 dB rings required, and
% max phi (360 for full circle chart, 180 for half chart, etc.) max phi
% is rounded up to a multiple of 5.
% saves scaling parameters for subsequent plot: ring, r
% r rings maxphi --
/pch {
  5 div ceiling 5 mul /maxphi exch def
  /rings exch def /r exch def
  r rings div /ring5 exch def ring5 5 div /ring exch def
  180 ring5 div ceiling ring5 mul /r1 exch def
  40 ring5 div ceiling ring5 mul /r2 exch def
  15 ring div ceiling ring mul /r10 exch def
  0 setlinewidth newpath
  ring ring r { 0 0 3 -1 roll 0 maxphi arc stroke } for
  r r1 gt { 1 2 maxphi { dup r exch pm r1 exch pl stroke } for } if
  r r2 gt { 2 2 maxphi { dup r exch pm r2 exch pl stroke } for } if
  0.5 setlinewidth
  ring5 ring5 r { 0 0 3 -1 roll 0 maxphi arc stroke } for
  r r10 gt { 10 10 maxphi { dup r exch pm r10 exch pl stroke } for } if
  0 90 maxphi { r exch pm 0 0 lineto stroke } for
} def
```

```
% normalized dB value to cartesian
% db phi -- x y
/dc { exch ring mul r add dup 0 lt { pop 0 } if exch pc } def
```

```
% move to point given normalized dB value
% db phi --
/dm { dc moveto } def
```

```
% draw line to point given normalized dB value
% db phi --
/dl { dc lineto } def
```

```
%%EndProcSet
%%EndProlog
306 396 translate
216 8 180 pch
0.5 setlinewidth
0 0 dm
```

```
-0.002429 1 dl
-0.009714 2 dl
-0.02186 3 dl
-0.038877 4 dl
-0.060773 5 dl
-0.087563 6 dl
-0.119266 7 dl
-0.155897 8 dl
-0.197484 9 dl
-0.24405 10 dl
-0.295626 11 dl
-0.352243 12 dl
-0.41394 13 dl
-0.480753 14 dl
-0.552725 15 dl
-0.629904 16 dl
-0.712338 17 dl
-0.800078 18 dl
-0.893181 19 dl
-0.991709 20 dl
-1.09572 21 dl
-1.20529 22 dl
-1.32049 23 dl
-1.44138 24 dl
-1.56805 25 dl
-1.70059 26 dl
-1.83907 27 dl
-1.9836 28 dl
-2.13427 29 dl
```

-2.29117 30 d1
-2.45443 31 d1
-2.62414 32 d1
-2.80043 33 d1
-2.98341 34 d1
-3.17323 35 d1
-3.37 36 d1
-3.57388 37 d1
-3.78501 38 d1
-4.00355 39 d1
-4.22966 40 d1
-4.46351 41 d1
-4.70529 42 d1
-4.95518 43 d1
-5.21338 44 d1
-5.48011 45 d1
-5.75558 46 d1
-6.04002 47 d1
-6.3337 48 d1
-6.63686 49 d1
-6.94978 50 d1
-7.27275 51 d1
-7.60608 52 d1
-7.9501 53 d1
-8.30517 54 d1
-8.67164 55 d1
-9.04992 56 d1
-9.44043 57 d1
-9.84361 58 d1
-10.26 59 d1
-10.69 60 d1
-11.1342 61 d1
-11.5933 62 d1
-12.0678 63 d1
-12.5585 64 d1
-13.066 65 d1
-13.5912 66 d1
-14.1348 67 d1
-14.6979 68 d1
-15.2813 69 d1
-15.886 70 d1
-16.5132 71 d1
-17.1638 72 d1
-17.839 73 d1
-18.5398 74 d1
-19.2671 75 d1
-20.0216 76 d1
-20.8036 77 d1

-21.6127 78 d1
-22.4474 79 d1
-23.3045 80 d1
-24.1783 81 d1
-25.0595 82 d1
-25.9334 83 d1
-26.7792 84 d1
-27.5686 85 d1
-28.2674 86 d1
-28.8397 87 d1
-29.2557 88 d1
-29.5007 89 d1
-29.5796 90 d1
-29.5157 91 d1
-29.3426 92 d1
-29.0951 93 d1
-28.8039 94 d1
-28.4926 95 d1
-28.1777 96 d1
-27.87 97 d1
-27.576 98 d1
-27.2992 99 d1
-27.041 100 d1
-26.8014 101 d1
-26.5797 102 d1
-26.3746 103 d1
-26.1847 104 d1
-26.0084 105 d1
-25.8441 106 d1
-25.6904 107 d1
-25.5459 108 d1
-25.4094 109 d1
-25.2798 110 d1
-25.1564 111 d1
-25.0385 112 d1
-24.9256 113 d1
-24.8176 114 d1
-24.7142 115 d1
-24.6155 116 d1
-24.5218 117 d1
-24.4333 118 d1
-24.3504 119 d1
-24.2735 120 d1
-24.2033 121 d1
-24.1401 122 d1
-24.0847 123 d1
-24.0377 124 d1
-23.9995 125 d1

-23.9709 126 d1
-23.9523 127 d1
-23.9445 128 d1
-23.9478 129 d1
-23.9628 130 d1
-23.9901 131 d1
-24.0301 132 d1
-24.0831 133 d1
-24.1497 134 d1
-24.2303 135 d1
-24.3251 136 d1
-24.4345 137 d1
-24.5589 138 d1
-24.6984 139 d1
-24.8534 140 d1
-25.0239 141 d1
-25.2102 142 d1
-25.4123 143 d1
-25.6302 144 d1
-25.8637 145 d1
-26.1127 146 d1
-26.3768 147 d1
-26.6554 148 d1
-26.9477 149 d1
-27.2526 150 d1
-27.5689 151 d1
-27.8946 152 d1
-28.2276 153 d1
-28.5651 154 d1
-28.9037 155 d1
-29.2395 156 d1
-29.5681 157 d1
-29.8844 158 d1
-30.1832 159 d1
-30.4588 160 d1
-30.7063 161 d1
-30.9211 162 d1
-31.0997 163 d1
-31.24 164 d1
-31.3418 165 d1
-31.4064 166 d1
-31.4366 167 d1
-31.4368 168 d1
-31.4119 169 d1
-31.3675 170 d1
-31.3093 171 d1
-31.2427 172 d1
-31.1725 173 d1

-31.1034 174 d1
-31.0388 175 d1
-30.982 176 d1
-30.9353 177 d1
-30.9007 178 d1
-30.8795 179 d1
-30.8723 180 d1
stroke
showpage

Date: Thu, 7 Oct 1993 19:16:53 GMT
From: swrinde!sdd.hp.com!hpscit.sc.hp.com!hplextra!news.dtc.hp.com!col.hp.com!
fc.hp.com!perry@network.ucsd.edu
Subject: How can make the best Antena?
To: ham-ant@ucsd.edu

Eduardo Quero (equero@tolten.puc.cl) wrote:

: I 'am beginner, really inexpert.
: I have a ICON VHF transiver.
: My operating frecueny is 166300 (MHZ?)
: How i make an easy anntenna ?

I suggest a J-pole. It can be constructed from twinlead (very cheap)
or with copper pipe. There should be plans somewhere in the Frequently
Asked Questions. Amateur frequencies in the US are 144-148 MHz, so
you would need to scale the dimensions smaller for 166 MHz.

: The actual antenna is an elicoellicoidal (is very small)

I have never heard of this one.

: My idea is put it (transiver) in my bedroom and antenna in my roof.
: What is the maximun large of wire between transiver and antenna?

>30 meters length: RG8/U
3..30 meters: RG8/M (or RG8X)
<3 meters: RG58/U

: What kind of wire i use? (50 ohms?)

Yes, 50 ohm coaxial cable. RG8/X is OK for short VHF runs.

: I know the form of antenna, but What kind of material i can use to
: construct it? What is the best? I hope it that not expensive.

Steel, bronze brazing rod, copper tubing, aluminum tubing, all are OK.

: Thank and sorry (my english is not good). Do you understand me?

Creo que si. Su Engles es mas bueno a mi Espanol. :-)

Now everyone knows why I don't chase Spanish DX.

73,

Perry Scott
AA0ET

Date: Fri, 08 Oct 93 12:23:34 GMT
From: mvb.saic.com!unogate!news.service.uci.edu!usc!howland.reston.ans.net!pipex!
uknet!ukc!osprey.ukc.ac.uk!dl2@network.ucsd.edu
Subject: Transmit 2m and 70cm at the same time on a dual band antenna
To: ham-ant@ucsd.edu

Hi

Is it possible to transmit on 2m and 70cm at the same time using a
diplexer to connect the two sets to a X50 or X300 or simalar.

I was wondering if it was possible to have two packet stations running
together on the same antenna as there would be times when they would transmit
at the same time.

Thanks

Darren. (G7RBI).

Packet : G7RBI@GB7ICE.#34.GBR.EU

Date: Fri, 8 Oct 1993 18:57:41 GMT
From: swrinde!elroy.jpl.nasa.gov!usc!sol.ctr.columbia.edu!hamblin.math.byu.edu!
wicat!keithm@network.ucsd.edu
Subject: Transmit 2m and 70cm at the same time on a dual band antenna
To: ham-ant@ucsd.edu

dl2@ukc.ac.uk (Darren Lissenden) writes:

>Hi

> Is it possible to transmit on 2m and 70cm at the same time using a
>diplexer to connect the two sets to a X50 or X300 or simalar.

> I was wondering if it was possible to have two packet stations running
>together on the same antenna as there would be times when they would transmit
>at the same time.

>Thanks

>Darren. (G7RBI).

>Packet : G7RBI@GB7ICE.#34.GBR.EU

Yes. This is possible, and works fine. I currently run a 2m packet
station and a 440 repeater duplexed onto a single Diamond X-200 dual
band antenna.

--

Keith McQueen, Wicat Systems Inc. , (801)223-3284	My opinions are
Packet: n7hmf @ nv7v.UT.USA.NA	all mine...
Internet: keithm@wicat.com	...so there!

End of Ham-Ant Digest V93 #72
